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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/638,154	08/08/2003	Lydia Drews-Nicolai	903-007 (TG169 US)	6063
24295	7590	12/08/2005	EXAMINER	
Rodney T. Hodgson, Ph.D. 822 Pines Bridge Rd. Ossining, NY 10562			HAILEY, PATRICIA L	
			ART UNIT	PAPER NUMBER
			1755	
DATE MAILED: 12/08/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/638,154	DREWS-NICOLAI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Patricia L. Hailey	1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 April 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31,34,35,40-45 and 47-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31,34,35,40,42,44,45,48 and 50-52 is/are rejected.
- 7) ☒ Claim(s) 41,43, 47,49 and 53-61 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>04/08/05</u> . | 6) <input type="checkbox"/> Other: _____  |

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on April 8, 2005, has been entered.

The aforementioned submission includes amendments to claims 1, 25, and 52, and an Information Disclosure Statement. The reference cited on the Information Disclosure Statement is the same as that cited on an Information Disclosure Statement filed by Applicants on December 8, 2003.

As no claims have been canceled or added; claims 1-31, 34, 35, 40-45, and 47-61 remain pending in this application.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. ***Claims 1-31, 34, and 35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject***

*matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.*

The subject matter that is present in the instant claims but is not present in or described in the Specification is the claim limitation "wherein no significant amount of zirconium compound...is or has been added to the aqueous suspension of titanium dioxide base material", as recited in claim 1.

Page 5, lines 1 and 2 of the Specification reads: "No zirconium compounds were added to the suspension to achieve this result."

4. *Claims 1-31, 34, and 35 rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for "no zirconium compounds", does not reasonably provide enablement for "no significant amount of zirconium compound". The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims.*

The subject matter that is present in the instant claims but is not present in or described in the Specification is the claim limitation "wherein no significant amount of zirconium compound...is or has been added to the aqueous suspension of titanium dioxide base material", as recited in claim 1.

Page 5, lines 1 and 2 of the Specification reads: "No zirconium compounds were added to the suspension to achieve this result."

*Claim Objections*

5. *Claims 6 and 7 are objected to because of the following informalities:*

Each of claims 6 and 7 is missing a period (".").

Appropriate correction is required.

*Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under

37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. *Claims 1, 3-5, 8-15, 23, 24, 34, 35, 40, 42, 44, 45, 48, and 50-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (U. S. Patent Application Publication No. 2005/0228112).*

Takahashi et al. disclose a method for producing anatase type titanium dioxide pigments, comprising adding to hydrous titanium oxide a phosphorus oxide corresponding to 0.15-0.55% by weight calculated as  $P_2O_5$ , and further adding an aluminum compound in an amount of not less than 0.2% by weight calculated as  $Al_2O_3$ . See paragraph [0003] of Takahashi et al. (considered to read upon **steps (a) and (c) of each of claims 1, 51, and 52, as well as claims 3 and 5**).

The surface of the titanium dioxide pigment may be coated with inorganic compounds such as those of aluminum, zirconium, titanium, among others. Exemplary compounds of these metals include oxides, hydroxides, hydrated oxides, and phosphate salts. The coating amount of the inorganic compound is about 0.05 to 15% by weight. See paragraph [0011] of Takahashi et al. (considered to read upon **step (b) of claim 1**, as well as the claimed percentage amounts recited in **claims 10-13**, reading upon **claim 40**, and upon **step (b) of claim 51**), which also discloses that the coating layer can be made porous or dense by controlling the conditions of coating treatment, including pH.

Another example is a titanium dioxide pigment coated with a hydrated oxide of aluminum in an amount of 0.05-3% by weight; alternatively, aluminum phosphate hydrate may be coated in place of the hydrated oxides of aluminum. See paragraph [0016] of Takahashi et al. (considered to read upon **claims 23 and 24**).

Another method for producing the pigment involves calcining a hydrous titanium oxide, and adding there to an aluminum compound corresponding to 0.02-0.2% by weight calculated as  $\text{Al}_2\text{O}_3$ , and a phosphoric acid compound corresponding to 0.02-0.5% by weight calculated as  $\text{P}_2\text{O}_5$ . Further, aluminum chloride and aluminum oxide can be employed as the aluminum compound, and phosphoric acid compounds such as orthophosphoric acid, metaphosphoric acid, pyrophosphoric acid, and salts thereof can be used as the phosphoric acid compound. See paragraphs [0017] and [0018] of Takahashi et al. (considered to read upon **claim 4**).

The hydrous titanium oxide can be obtained by dissolving ilmenite ore or titanium slag in sulfuric acid, thereby reacting the titanium component with sulfuric acid to produce titanyl sulfate, and hydrolyzing with heating to produce the hydrous titanium oxide. See paragraph [0019] of Takahashi et al. (considered to read upon **claims 8 and 9**).

After the desired titanium dioxide particles are obtained, they may be subjected to wet grinding, dehydration washing, drying and dry grinding by known methods. See paragraph [0020] of Takahashi et al. (considered to read upon **claim 34**).

The coating of the inorganic compound can be carried out by dispersing the titanium oxide particles in a liquid medium such as water to prepare a slurry (considered to read upon **claim 35**), which is preferably subjected to further wet grinding. Next, a solution of a salt of the desired inorganic compound is added thereto, followed by adding an acidic compound or a basic compound (or these three are added simultaneously to carry out a neutralization reaction), thereby depositing the inorganic compound on the surface of the titanium oxide particles. Examples of the salts of inorganic compounds include sodium aluminate, aluminum sulfate, aluminum nitrate (as salts of aluminum compound), zirconium chloride (as salts of zirconium compound), and titanium chloride and titanium sulfate (as salts of titanium compound). See paragraph [0021] of Takahashi et al. (considered to read upon **claims 8, 9, 14, 15, 42, and 44**).

The pigment can be employed in resin compositions that are useful for various uses such as paints, papers and fibers. See paragraph [0023] of Takahashi et al. (considered to read upon **claims 48 and 50**).

Takahashi et al. is silent with respect to the claims' recited order of steps. However, the claims in their present form are not seen to be limited to performing the claimed steps in the order in which they appear. Therefore, it would have been obvious to one skilled in the art at the time the invention was made that the process disclosed in Takahashi et al. encompasses the instantly claimed process, absent the showing of convincing evidence to the contrary, as it is known in the art that altering or reversing



the order of steps in a process does not impart patentability when no unexpected result is obtained. Ex parte Rubin (POBA 1959) 128 U.S.P.Q. 440, Cohn v. Comr. Pats. (DCDC 1966) 251 F Supp 378, 148 U.S.P.Q. 486.

### *Allowable Subject Matter*

10. *Claims 2, 6, 7, 16-22, and 25-31 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 1<sup>st</sup> and 2<sup>nd</sup> paragraphs, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.*

11. *Claims 41, 43, 47, 49, and 53-61 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.*

12. The following is a statement of reasons for the indication of allowable subject matter:

The cited references do not teach or suggest the addition of a magnesium compound, as recited in claims 2, 6, 7, 16-22, 25-31, 41, 43, 49, and 53-61.

### *Priority*

13. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Applicants' Priority Document was filed on October 30, 2003.

*Conclusion*

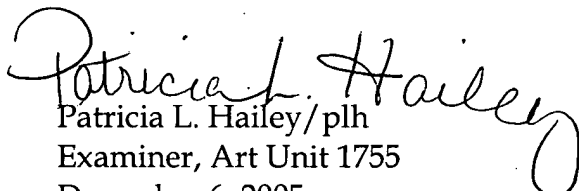
14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Hailey whose telephone number is (571) 272-1369. The examiner can normally be reached on Mondays-Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 1700 Receptionist, whose telephone number is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Patricia L. Hailey/plh  
Examiner, Art Unit 1755  
December 6, 2005

  
J. A. LORENZO  
SUPERVISORY PATENT EXAMINER